

CLAIMS

[1] A vibration sensor comprising a fixed electrode, and a diaphragm electrode having a weight member attached to a membrane surface facing away from the fixed electrode and fixedly supported at peripheries thereof, the vibration sensor being capable of outputting variations of capacitance between the fixed electrode and the diaphragm electrode as vibration signals,

wherein the vibration sensor further comprises projecting portions formed on parts of an end portion of the weight member to project along a direction of the membrane surface and spaced from the membrane surface of the diaphragm electrode, and a restricting member for contacting the projecting portions of the weight member displaced along the direction of the membrane surface of the diaphragm electrode thereby to restrict displacement of the weight member.

[2] A vibration sensor comprising a fixed electrode, and a diaphragm electrode having a weight member attached to a membrane surface facing away from the fixed electrode and fixedly supported at peripheries thereof, the vibration sensor being capable of outputting variations of capacitance between the fixed electrode and the diaphragm electrode as vibration signals,

wherein the vibration sensor further comprises restricting members for contacting end portion of the weight member displaced along the direction of the membrane surface of the diaphragm electrode, thereby to restrict displacement of the weight member, the restricting members being formed on parts opposed to the end portion of the weight member and spaced from the membrane surface of the diaphragm electrode.

30 [3] A vibration sensor as defined in Claim 1 or 2, further comprising a

second restricting member for contacting a surface of the weight member displaced along a direction perpendicular to the membrane surface of the diaphragm electrode, thereby to restrict displacement of the weight member.

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[4] A vibration sensor as defined in Claim 3, further comprising a circuit board having an output circuit mounted thereon for vibration signals, wherein the circuit board or an electronic part mounted on the circuit board acts also as the second restricting member.

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[5] A vibration sensor comprising a fixed electrode, and a diaphragm electrode having a weight member attached to a membrane surface facing away from the fixed electrode and fixedly supported at peripheries thereof, the vibration sensor being capable of outputting variations of capacitance between the fixed electrode and the diaphragm electrode as vibration signals,

wherein the weight member includes a corner portion contacting the diaphragm electrode and having a sectional shape forming an obtuse angle with the membrane surface of the diaphragm electrode.

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[6] A vibration sensor comprising a fixed electrode, and a diaphragm electrode having a weight member attached to a membrane surface facing away from the fixed electrode and fixedly supported at peripheries thereof, the vibration sensor being capable of outputting variations of capacitance between the fixed electrode and the diaphragm electrode as vibration signals,

wherein the diaphragm electrode includes a corrugated portion between an inner portion where the weight member is attached and an outer portion fixedly supported.